WHAT IS CLAIMED IS:

1. A developer cartridge which is rotatably mounted in a developing unit of an image forming apparatus, and supplies a developer to said developing unit while rotating, comprising a cylindrical cartridge main body having a developer outlet hole in an outer surface near one end, and a ring-like cartridge-side shutter which is fitted on the outer surface near said one end of said cylindrical cartridge main body to be movable along a rotating shaft of said cylindrical cartridge main body between a position where the developer outlet hole is opened and a position where the developer outlet hole is closed,

wherein said developing unit has a guide for inserting said developer cartridge and a driving unit for rotating said developer cartridge, said guide has a main body-side shutter with a hole, and when said developer cartridge is mounted, said cartridge-side shutter of said cylindrical cartridge main body moves from the position where the developer outlet hole is closed to the position where the developer outlet hole is opened, the developer outlet hole aligns itself with the hole of said main body-side shutter, and every time said cylindrical cartridge main body and said main body-side shutter integrally rotate to align the developer outlet hole and the hole of said main body-side shutter with a developer replenishment port

formed below said main body-side shutter, the developer in said developer cartridge is supplied from the developer replenishment port to said developing unit via the developer outlet hole and the hole of said main body-side shutter.

2. A developer cartridge according to claim 1, wherein a diameter a of the developer outlet hole, a diameter b of the hole of said main body-side shutter, and a diameter c of the developer replenishment port satisfy a relation of $a \leqq b \leqq c$.

3. A developer cartridge according to claim 1, wherein said cartridge-side shutter has a hole, and fits on said cylindrical cartridge main body so the hole is movable between an opening position where the hole aligns itself with the developer outlet hole and a closing position.

4. A developer cartridge according to claim 3, wherein a diameter a of the developer outlet hole, a diameter d of the hole of said cartridge-side shutter, a diameter b of the hole of said main body-side shutter, and a diameter c of the developer replenishment port satisfy a relation of $a \leqq d \leqq b \leqq c$.

5. A developer cartridge according to claim 1, wherein a spiral is formed on an inner surface of said cylindrical cartridge main body.

6. A developer cartridge according to claim 1, wherein said guide and said driving unit

are integrated.

7. A developer cartridge according to claim 1, wherein a toner scattering prevention seal is attached near the developer outlet hole of said cylindrical cartridge main body.

8. A developer cartridge according to claim 1, wherein said main body-side shutter is made of an elastic material.

9. A developer cartridge according to claim 1, wherein said cylindrical cartridge main body is supported by a roller which is in contact with the outer surface and made of an elastic material.

10. A developer cartridge according to claim 1, wherein a projection for preventing said cartridge-side shutter from slipping off is formed on the outer surface near said one end of said cylindrical cartridge main body.

11. A developer cartridge according to claim 1, wherein an inner surface of said cartridge-side shutter and a surface of said cylindrical cartridge main body along which said cartridge-side shutter moves are threaded to mesh with each other, and said cartridge-side shutter is rotated to move on the surface of said cylindrical cartridge main body and stops at an unthreaded portion.

12. An image forming apparatus comprising a developing unit for developing an electrostatic

latent image on an image bearing body with a developer, and a transfer unit for transferring the developed developer image onto a transfer medium,

wherein said developing unit has a developer cartridge rotatably mounted to supply the developer to said developing unit while rotating, a guide for inserting said developer cartridge, and a driving unit for rotating said developer cartridge;

said developer cartridge has a cylindrical cartridge main body having a developer inlet hole in an outer surface near one end, and a ring-like cartridge-side shutter which is fitted on the outer surface near said one end of said cylindrical cartridge main body to be movable along a rotating shaft of said cylindrical cartridge main body between a position where the developer outlet hole is opened and a position where the developer outlet hole is closed;

said guide has a main body-side shutter with a hole; and

when said developer cartridge is mounted, said cartridge-side shutter of said cylindrical cartridge main body moves from the position where the developer outlet hole is closed to the position where the developer outlet hole is opened, the developer outlet hole aligns itself with the hole of said main body-side shutter, and every time said cylindrical cartridge main body and said main body-side shutter integrally rotate

to align the developer outlet hole and the hole of said main body-side shutter with a developer replenishment port formed below said main body-side shutter, the developer in said developer cartridge is supplied from the developer replenishment port to said developing unit via the developer outlet hole and the hole of said main body-side shutter.

13. An image forming apparatus according to claim 12, wherein a diameter a of the developer outlet hole, a diameter b of the hole of said main body-side shutter, and a diameter c of the developer replenishment port satisfy a relation of $a \leqq b \leqq c$.

14. An image forming apparatus according to claim 12, wherein said cartridge-side shutter has a hole, and fits on said cylindrical cartridge main body so the hole is movable between an opening position where the hole aligns itself with the developer outlet hole and a closing position.

15. An image forming apparatus according to claim 14, wherein a diameter a of the developer outlet hole, a diameter d of the hole of said cartridge-side shutter, a diameter b of the hole of said main body-side shutter, and a diameter c of the developer replenishment port satisfy a relation of $a \leqq d \leqq b \leqq c$.

16. An image forming apparatus according to claim 12, wherein a spiral is formed on an inner surface of said cylindrical cartridge main body.

17. An image forming apparatus according to claim 12, wherein said guide and said driving unit are integrated.

18. An image forming apparatus according to claim 12, wherein a toner scattering prevention seal is attached near the developer outlet hole of said cylindrical cartridge main body.

19. An image forming apparatus according to claim 12, wherein said main body-side shutter is made of an elastic material.

20. An image forming apparatus according to claim 12, wherein said cylindrical cartridge main body is supported by a roller which is in contact with the ~~outer~~ surface and made of an elastic material.

~~20~~ 21. An image forming apparatus according to claim 12, wherein a projection for preventing said cartridge-side shutter from slipping off is formed on the outer surface near said one end of said cylindrical cartridge main body.

~~21~~ 22. An image forming apparatus according to claim 12, wherein an inner surface of said cartridge-side shutter and a surface of said cylindrical cartridge main body along which said cartridge-side shutter moves are threaded to mesh with each other, and said cartridge-side shutter is rotated to move on the surface of said cylindrical cartridge main body and stops at an unthreaded portion.